



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/541,103	08/17/2005	Robert P. Dion	62955A	4926
<div>109      7590      03/23/2009</div> <div>The Dow Chemical Company Intellectual Property Section P.O. Box 1967 Midland, MI 48641-1967</div>				
EXAMINER				
NERANGIS, VICKIE MARIE				
ART UNIT		PAPER NUMBER		
1796				
MAIL DATE		DELIVERY MODE		
03/23/2009		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/541,103

**Applicant(s)**

DION ET AL.

**Examiner**

Vickey Nerangis

**Art Unit**

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 December 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6, 8 and 11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8 and 11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)  
Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Inventor's Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. All outstanding objections and rejections are withdrawn in light of applicant's amendment filed on 12/19/2008.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior office action.
3. New grounds of rejection are set forth below. The rejection in paragraph 7 of Office action mailed on 11/13/2008 was inadvertently written to reject claims 3-5. The rejection should have been for now-canceled claim 7. Thus, a *2<sup>nd</sup> non-final Office action is set forth as follows.*

***Claim Rejections - 35 USC § 103***

4. Claims 1, 6, 8, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Avakian (US 2004/0106713) in view of Patel (US 6,528,572).

Avakian discloses a composition that is molded (paragraph 0007) comprising a macrocyclic polyester and an electrical conductivity additive such as carbon nanofibers (i.e., carbon nanotubes (paragraph 0025 and Table A), which would inherently provide for the presently claimed conductivity of  $1 \times 10^{-5}$  S/cm because it is conductive and such a property is evidently dependent upon the nature of the composition used. Case law holds that a material and its properties are inseparable. *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Avakian fails to disclose the aspect ratio of the carbon nanotubes which are added to impart electrical conductivity.

Patel discloses a conductive polymer composition comprises carbon nanotubes and teaches that it is preferred that the carbon nanotubes (which are added to impart electrical conductivity) have an aspect ratio of greater than or equal to 100, more preferably greater than or equal to 1,000 (col. 3, lines 36-40).

Given that carbon nanotubes provide for more electrical conductivity to a polymer when the aspect ratio is greater as taught by Patel, it would have been obvious to one of ordinary skill in the art to utilize a carbon nanotube with an aspect of 150 or greater and thereby obviously obtain a composition with electrical conductivity of  $\times 10^{-5}$  S/cm since Avakian teaches that carbon nanotubes are added to impart electrical conductivity.

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Avakian (US 2004/0106713) in view of Patel (US 6,528,572) and further in view of Wang (US 6,436,549).

The discussion with respect to Avakian and Patel in paragraph 4 above is incorporated here by reference.

Avakian fails to disclose the use of a polyfunctional chain extending agent.

Wang discloses block copolymers from macrocyclic oligoesters and teaches that the design and control of elasticity, crystallinity, ductility, and molecular weight is had when they are block copolymerized (i.e., extended) with a dihydroxyl-functionalized polymer (abstract, col. 1, lines 52-60).

Given that one can design and control elasticity, crystallinity, ductility, and molecular weight of macrocyclic oligomers by copolymerizing with a dihydroxyl-functionalized polymer as

taught by Wang, it would have been obvious to one of ordinary skill in the art to use the chain extender taught by Wang with the macrocyclic polyester taught by Avakian.

6. Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Avakian (US 2004/0106713) in view of Patel (US 6,528,572) and further in view of Carson (US 5,321,056).

The discussion with respect to Avakian and Patel in paragraph 4 above is incorporated here by reference.

Avakian fails to disclose a core shell rubber or a polyfunctional active hydrogen-containing polymer.

Ishino discloses a polyester composition and teaches that the impact strength of the composition can be substantially increased by the addition of small amounts of a core-shell impact modifier, wherein the shell is made compatible with the polyester by functionalizing it with hydroxyalkyl (meth)acrylate (col. 2, line 45 to col. 3, line 56). The core-shell impact modifier of Carson reads on both the presently claimed core shell rubber or a polyfunctional active hydrogen-containing polymer.

Given that the impact strength of a composition is greatly improved by the addition of a hydroxy-functionalized core-shell impact modifier, it would have been obvious to one of ordinary skill in the art to add the impact modifier of Carson to the composition of Avakian in order to obtain improved impact strength.

***Response to Arguments***

7. Applicant's arguments with respect to claim 7 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vickey Nerangis whose telephone number is (571) 272-2701. The examiner can normally be reached on Monday - Friday, 8:30 a.m. - 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

3/20/2009  
vn

/Vickey Nerangis/  
Examiner, Art Unit 1796